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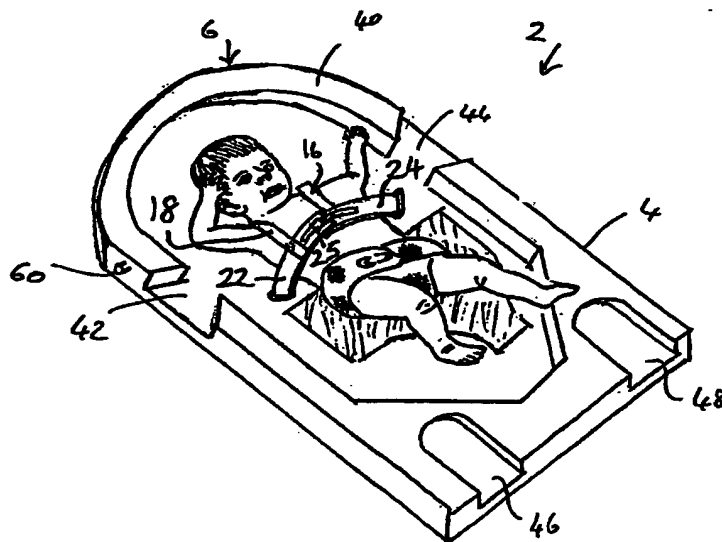
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(54) Title: BABY CHANGING MATS



(57) Abstract: A baby changing mat (2) has a rigid base (10) supporting shoulder and waist straps (14, 16; 22, 24) to anchor the upper torso of the baby to the mat. The mat (2) is provided with heel recesses (42, 44) for receiving the heels of a carer seated on the floor. When the carer kneels on the floor, the knees can engage knee recesses (46, 48). A raised peripheral wall (40) provides a barrier to fluids gravitating towards the carer. Attaching strips (50) enable an absorbent cloth (52) to be fastened to the mat in a position to receive the lower torso of the baby. The cloth (52) can be lifted at one end to provide a barrier between the baby and the carer.

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BABY CHANGING MATS

The present invention relates to baby changing mats.

5        Baby changing mats exist comprising a generally rectangular piece of padded waterproof material arranged to be placed on a surface and onto which a baby can be laid to change its nappy or diaper.

10        A major disadvantage of this arrangement is that the baby is unrestrained and in the case of a particularly active baby can interfere with the nappy changing operation and escape from the mat.

15        PCT Patent Specification Publication No WO 85/01197 discloses a baby changing mat incorporating a rigid base and having a waist strap secured thereto so that the waist strap can be fastened around the waist of the baby to restrain the baby.

20        This particular arrangement suffers from the disadvantage that the baby is still able to rotate about its vertical axis and even along its vertical axis so that it can still interfere with the nappy changing operation. A further disadvantage is that such mats are generally used on a table top and there is a danger of the mat slipping relative to the table top and, in an extreme case, slipping off the table onto the floor.

It is an object of the present invention to provide an improved baby changing mat.

25        According to the present invention there is provided a changing mat comprising a base supporting a shoulder harness to restrain the shoulders of a baby laid on the mat, and a pair of recesses for accommodating parts of a carers limbs to locate the mat relative to the carer.

30        A baby changing mat, embodying the present invention, will now be described, by

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way of example, with reference to the accompanying diagrammatic drawings, in which:

Figure 1 is a perspective view of a baby changing mat with a baby secured thereto;

Figure 2 is an end view of the mat of Figure 1; and

Figure 3 is a plan view of the mat of Figure 1.

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The baby changing mat to be described is primarily intended for changing a baby's nappy or diaper but it will be appreciated that it can be used for administering to other needs of the baby such as applying medication to the skin, cutting finger and toe nails and many other diverse operations.

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Furthermore, the changing mat is primarily intended to be used on the floor rather than on a raised surface but, of course, it can be used safely on a raised surface such as a table or an existing changing table unit if required.

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As shown in Figure 1, the mat 2 has a generally rectangular main portion 4 with a semi-circular end portion 6. The structure of the mat 2 can be more clearly seen in Figure 2 which shows a rigid base 10 of hard board carrying a sponge-like layer 12 both accommodated within an outer sleeve 8 of waterproof fire-retardant plastics material or using a fire retardant interlinear. The base may be removed through a zipped opening such as for transport. The mat may still be used safely without the base. The lower surface of the sleeve may be provided with a non-slip surface or layer. The base 10 may be hinged so that it can be folded into a compact size for easy storage. Also, the sleeve itself can be provided with co-operating fasteners such as poppers or zips at opposite ends so that the sleeve can be rolled up and secured in rolled up format for easy storage.

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Secured at spaced locations on the base 10 are a pair of shoulder straps 14 and 16 which pass through respective openings 18 and 20 in the sleeve 8 (see Figure 3). The end of each shoulder strap terminates in a connection to a hip-to-waist strap 22, 24 which straps are secured at two other spaced locations on the base 10 and pass through respective openings 26 and 28 in sleeve 8. The waist straps 22 and 24 can be threaded or rigidly

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fastened to the shoulder straps 14 and 16 and are fastened together with fastening means in the first instance such as mating VELCRO (registered trade mark) hook and loop strips secured to the free ends of the hip-to-waist straps and secondly with a securing releasable buckle 25 in the same vicinity. The waist straps may be internally padded with a foam material to create a bulbous area or barrier of, for example, semi-circular or circular cross-section, to which acts to make it more difficult for the arms of the restrained infant to reach the soiled areas with their hands. Preferably, the straps should be at least as thick as they are wide. In a modification, instead of loops on the shoulder straps 14 and 16, mating VELCRO strips can be used to secure the shoulder straps to the waist straps.

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The sponge-like layer 12 has an increased (double or more) thickness around its periphery to define a peripheral wall 40. The peripheral wall in the semi-circular portion provides a soft head buffer for the child's head.

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The wall 40 is breached at the junctions of the semi-circular and main portions to define two recesses 42 and 44 for receiving or accommodating the sides of the heels and the ankles of the carer ministering to the baby.

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In operation, the carer sits on the floor with the main portion 4 located between their legs and the semi-circular portion 6 lying remote from the carer. The carer's heels and ankles are then located in respective recesses 42 and 44 to lock the mat against movement relative to the floor and the carer with the carer's back vertebrae guaranteed to remain straight. The carer can then secure the baby to the mat using the shoulder and waist straps and administer to the baby's needs.

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The portion of the wall 40 extending along the end of the mat remote from the semi-circular portion is provided with a pair of spaced recesses 46 and 48 for accommodating the knees of the carer. This allows for an alternative pose for the carer in which the carer kneels on the mat with one knee in each recess 46 and 48. It is important that a portion of the wall 40 extends between the knee recesses 46 and 48 and the central region of the mat

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to ensure that any fluids released while changing the baby are retained by the wall and do not reach the knees and clothes of the carer nor the surface on which the mat is positioned. Instead of the recesses 46 and 48 being located along one end, they may be located on opposite corners or sides

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Adjacent to each waist strap opening 26 and 28 lies a respective VELCRO strip 50. A shaped cloth 52 of absorbent material for example towelling has mating VELCRO fasteners which allow it to be secured to the strips 50. The cloth 52 is profiled to cover the region of the mat between the openings 26, 28 and the wall 40 so that when in use the portion of the baby from the waist downwards lies on the cloth. The strips 50 may be located on the raised wall 40 to prevent fluids escaping over the sides of the cloth.

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The purpose of the cloth is to absorb spoils produced by the baby. The end of the cloth 52 remote from the straps 50 is tapered so that in the event of a fountain of urine produced by a male baby, the tapered end can be drawn up between the legs of the baby and so shield the carer and the baby from the fountain.

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Mounted on the base 10 and extending radially downwardly from opposite ends of the semi-circular portion 6 are a pair of sockets 60 and 62. The sockets 60 and 62 can accommodate a shaft carrying a toy of some type or other which can be engaged by the hands of the baby to distract the baby while the carer is ministering to it. Instead of sockets 60 and 62, shafts (not shown) may be provided which fit into sockets of a toy.

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It will be appreciated that the shoulder and waist straps ensure that a baby is secured to the mat so that significant movement relative to the mat is restricted and the ability of the baby to interfere with the changing operation is limited. Also, the provision of the peripheral wall on the mat and the ability to fasten a disposable or reusable cloth ensure that the carer is protected. Finally, the provision of knee or heel recesses ensures that the mat is securely held by the carer with added comfort for the carer.

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The mat may be provided with a transversely extending gully (not shown) between the upper and lower portions to prevent fluids travelling from the lower portion with the cloth 52 to the upper portion.

- 5        Whilst primarily intended for babies, the mat could be adapted in size for use with children or even adults. Also a smaller toy version could be made for use with children's dollies.

- 10        Stabilising rubber may be used on the back to the mat to stop it sliding on the supporting surface.

The detachable spoils cloth can be detached from one side whilst the carer is in the ankles position and flipped over one carer's leg whilst a dirty nappy is changed and then flipped back when required.

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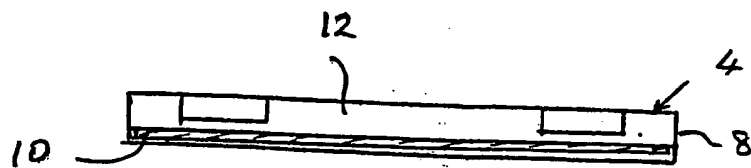
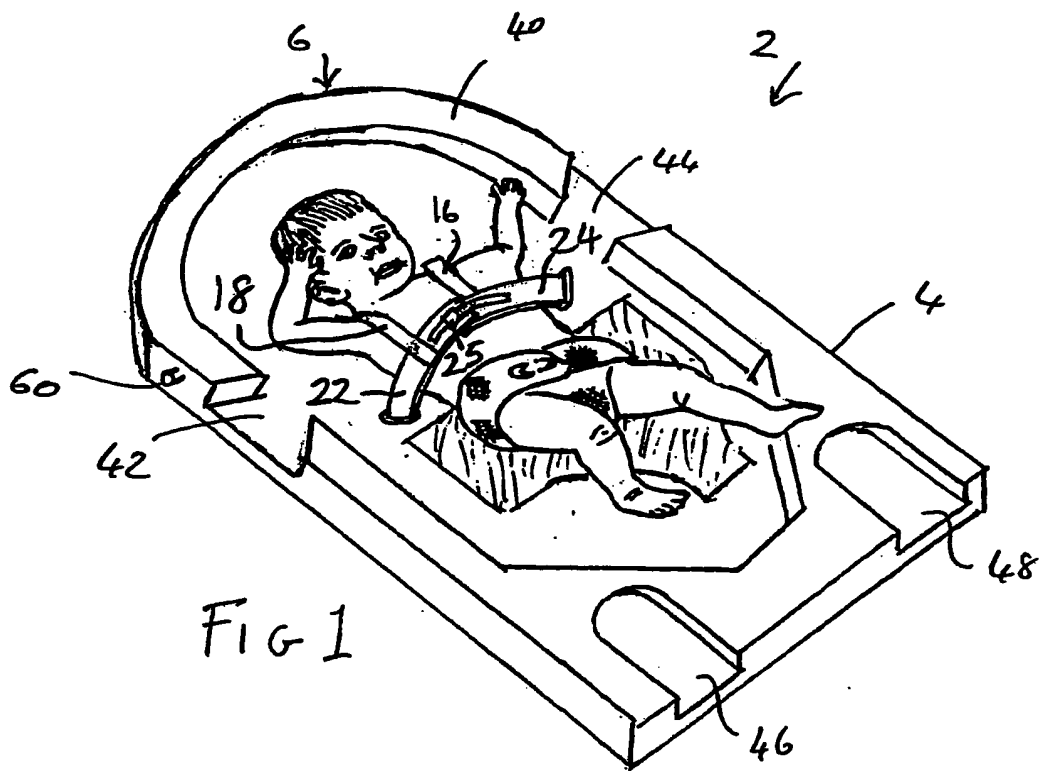
CLAIMS

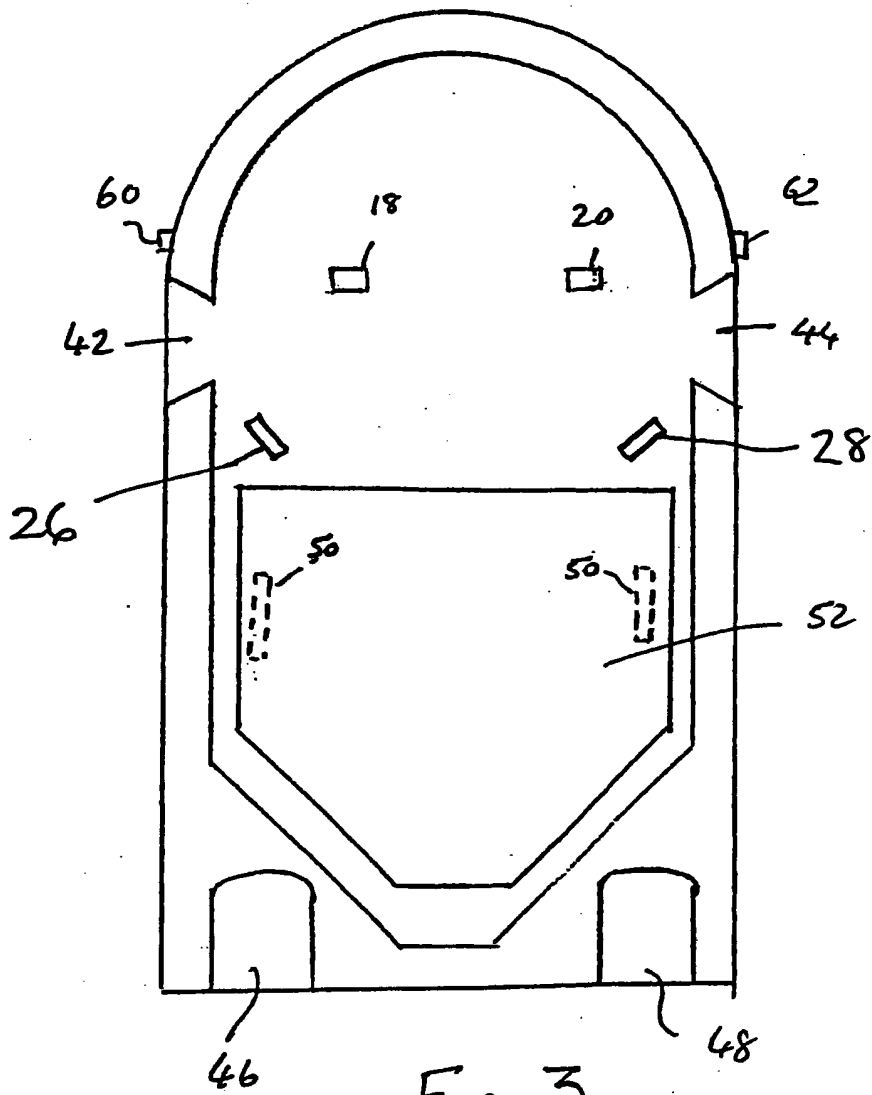
1. A changing mat comprising a base supporting a pair of shoulder straps to restrain the shoulders of a baby laid on the mat, and a pair of recesses for accommodating parts of a carers limbs to locate the mat relative to the carer.  
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2. A changing mat according to Claim 1, wherein said recesses are positioned along one end of the mat to receive the carers knees.
- 10 3. A changing mat according to Claim 2, including a wall between the recesses and the remainder of the mat to form a barrier to fluids travelling across the mat towards said recesses.
- 15 4. A changing mat according to Claim 2 or to Claim 3, including a second pair of recesses, the second recesses being located one on each of two opposite lateral sides of the mat to accommodate the heels of the carer.
5. A changing mat according to Claim 1, wherein said recesses are located on opposite sides of the mat and positioned to receive the carer's heels.  
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6. A changing mat according to Claim 5, wherein said mat has a peripheral raised wall and wherein said recesses are provided by breaches in said wall.
- 25 7. A changing mat according to any preceding claim, including fastening means for fastening an absorbent cloth to the mat in a position to receive the lower portion of the baby thereon when restrained by the harness.
- 30 8. A changing mat according to Claim 7, wherein the fastening means only partially fastens the cloth to allow the side nearest the carer to be lifted to form a barrier between the lower torso of the baby and the carer.

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9. A changing mat according to any preceding claim, including a transversely extending pair of straps co-operating with the shoulder straps to form a four point anchoring system for anchoring the upper torso of the baby to the mat.
- 5 10. A changing mat according to any preceding claim, including coupling means rigid with the rigid base to enable a toy to be coupled to the mat in a position in which the baby can engage the toy with its hands.
- 10 11. A changing mat according to any preceding claim, including a sponge material mounted on said base and a waterproof plastics material enveloping said sponge material and said base.
12. A changing mat according to Claim 11, wherein said sponge material has regions of different thickness to define said recesses.
- 15 13. A changing mat according to Claim 9, wherein said pair of co-operating straps are at least as thick as they are wide.







## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/04801

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A47D5/00 A47D15/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A47D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GB 2 299 503 A (GRAINGER JOHN EDWARD) 9 October 1996 (1996-10-09)	1,5-9, 11,12
A	figures 1-3 ---	4
Y	GB 2 319 173 A (HENDRIKS JUDITH MARJORIE) 20 May 1998 (1998-05-20)	1,5,6,9, 11,12
Y	figure 1 ---	
Y	US 4 989 286 A (TUCKER ANN) 5 February 1991 (1991-02-05)	7,8
	figure 1 ---	
A	DE 299 04 048 U (SCHMIDT ANDRE) 2 June 1999 (1999-06-02)	1
	figures 1,4 ---	
	--- -/-	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

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\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

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06/03/2001

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# INTERNATIONAL SEARCH REPORT

International Application No  
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WO 85 01197 A (TRITON EMPRISE TRADING COMPANY ;EVES HAROLD JAMES (GB)) 28 March 1985 (1985-03-28) cited in the application figures 1,2,5,6</p> <p>-----</p>	1-12

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